REMARKS

It is respectfully requested that the above amendments be entered pursuant to the provisions of 37 C.F.R. § 1.116(b); that this application be reconsidered in view of the above amendments and the following remarks; and that all of the claims remaining in this application be allowed.

Amendments

The specification was amended to correct an obvious error in paragraph [008].

The following amendments to Claim 1 are requested pursuant to the provisions of 37 C.F.R. § 1.116(b):

a) insertion of the recitation that the cylindrical inner layer of polymer defines a single lumen within the catheter. Support for this amendment is seen in, for example, FIG.s 3C and 3D;

b) insertion of the recitation that the inner layer consists essentially of a first or inner polymer layer which is a lubricous polymer selected from the group consisting of polytetrafluoroethylene and high density ethylene. Support for this amendment is found throughout the specification and, for example, at page 6, paragraph [0033] as well as in previously presented Claim 2;

c) insertion of the recitation that the inner layer further consists essentially of a second or outer polymer layer which comprises polyimide. Support for this amendment is found throughout the specification and, for example, at page 6, paragraph [0033];

d) insertion of the recitation from previously presented Claim 2 that the strengthening polymer (polyimide) tapers to zero at the distal end of the inner layer; and

e) insertion of the recitation that the outer jacket surrounding the braided wire comprises a plurality of joined segments of polymers of increasing flexibility thereby having a proximal durometer higher than a distal durometer. Support for this amendment is found throughout the specification and, for example, paragraph [0012].

Claim 2 was amended to be dependent on Claim 1 and to recite that the microcatheter has a burst strength of from 700 to 1000 psi. Support for this amendment is found in Applicants' specification at, for example, page 2, paragraphs [008] and [009].

In view of the amendments to Claim 1 and 2, Applicants have requested that Claim 3 as well as 14-16 be canceled.

The amendments requested to Claims 4-11 and 17-22 were merely to correct claim dependency in view of the cancellation of Claims 3 and 14-16.

Claims 14-16 and 23-26 were canceled without prejudice merely to expedite prosecution of the catheter claims.

Insofar as these amendments place the claims in better form for appeal, their entry under 37 C.F.R. § 1.116(b) is proper. Entry of these amendments is requested.

Applicants specifically reserve the right to file a continuation application directed to the subject matter of the previously presented claims.

A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

The Claimed Invention

The invention as now claimed is directed to a microcatheter addressing two conflicting properties – high pressure tolerance and high flexibility. The solution which this invention embodies calls for four distinct physical components to yield its beneficial properties:

1. a cylindrical inner layer of polymer defining a single lumen in the catheter wherein said inner layer has a proximal end and a distal end and a flexibility at its distal end greater than at its proximal end further wherein said inner layer consists essentially of a first or inner polymer layer and a second or outer polymer layer at the proximal end and said first polymer layer at the distal end

and still further wherein said first polymer layer is a lubricous polymer selected from the group consisting of polytetrafluoroethylene and high density polyethylene and said second layer comprises polyimide and wherein the second layer tapers to zero at the distal end.

Note that the language "consisting essentially of" as it relates to the inner layer excludes the possibility that the inner layer contain a braid.

2. a braided wire layer over the inner layer, the braided wire layer including a distal segment of a first pic rate and a proximal segment of a second pic rate which is smaller than the first pic rate, the braided wire layer extending from the proximal end to within about 1 cm of the distal end of the catheter; and

3. an outer jacket having a greater flexibility at the distal end than at the proximal end (durometer selection).

In addition, Claim 2 further recites that the microcatheter of Claim 1 has a burst strength of from 700 to 1000 psi.

The claimed microcatheter of Claim 1 embodies the first three components. Its extreme distal end flexibility permits it to traverse remote vascular locations. Its extreme proximal end strength permits it to withstand the high pressures associated with the delivery of high viscosity liquid embolic compositions. Claim 1 has been amended to expressly recite these desired properties and characteristics.

In addition, Claim 2 recites that the microcatheter has a burst strength of from 700 to 1000 psi.

Examples 2-7 illustrate the manufacture and testing of microcatheters of the invention and show their ten fold greater flexibility at their distal tip relative to the proximal end and high burst pressures of over 800 psi.

Restriction Requirement

Previously presented Claim 26 was stated to be independent and distinct from the prior claims. As such, the Office Action withdrew this claim from consideration. Applicants construe this action as a restriction requirement and, as such, have canceled this claim without prejudice to filing a divisional application directed to the subject matter of that claim.

Rejections Under 35 U.S.C. § 102(b)

1. Claims 1-6 and 16 stand rejected under 35 U.S.C. § 102(b) over Samson, et al., U.S. Patent No. 6,186,978 ("Samson"). For the following reasons, this rejection is traversed.[1]

Initially, a rejection under 35 U.S.C. § 102(b) requires that all of the material elements of the claimed invention must be found in the cited reference. *In re Marshall*, 198 USPQ 344 (CCPA 1978). As now presented, the claims of this application recite a catheter with a single lumen having a three component wall construction with a first or inner layer as described above, a second or outer layer as described above and the braid interposed between the inner and outer layers.

Contrarily, the cited Samson patent requires the presence of two lumens (Col. 1, lines 38-40) and the use of a braid in the outside tubing assembly (Col. 1, lines 59-60).

As Samson fails to teach either the single lumen component of this invention or interposing the braid between the inner and outer layers of the wall construct, this reference cannot anticipate now presented Claim 1.

Further, as to now presented Claim 2, the microcatheter is further characterized as having a burst strength of from 700 to 1000 psi. Such a recitation is not found in Samson and, again, Samson cannot be an anticipatory reference against Claim 2.

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[1] Claim 16 has been canceled and, accordingly, the rejection of this claim is now moot.

As Claims 3-6 are dependent from Claim 1, these claims likewise cannot be anticipated by Samson.

Withdrawal of this rejection is requested.

2. Claims 23-25 were rejected under 35 U.S.C. § 102(b) over McGurk, U.S. Patent No. 5,676,659. As these claims have been canceled, this rejection is moot. Such cancellation is not to be construed as an acquiesce by Applicants as to this rejection. Rather, Applicants have canceled these claims to expedite allowance of what is believed to be allowable subject matter and have reserved the right to file a continuation application directed to these claims.

Withdrawal of this rejection is requested.

Rejections under 35 U.S.C. §103(a)

1. Claims 7-8, 14-15, and 17-19 stand rejected under 35 U.S.C. § 103(a) over Samson in view of Scribner, et al., U.S. Patent No. 6,053,904;

2. Claims 9-13 stand rejected under 35 U.S.C. § 103(a) over Samson in view of Pray, U.S. Patent No. 5,533,987; and

3. Claims 20-22 stand rejected under 35 U.S.C. § 103(a) over Samson in view of Azam, et al., U.S. Patent No. 5,860,963.

For the following reasons, this rejection is traversed.

Initially, it is noted that all of these claims are dependent directly or indirectly from Claim 1. In this regard, suffice it to note that a claim dependent from an allowed claim is itself allowable. As Claim 1 is now distinguished from Samson and the rejection of this claim under § 102(b) is believed to be moot. Accordingly, the rejection of all of the dependent claims under 35 U.S.C. §103(a) is also moot.

Withdrawal of these rejections is requested.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

Notwithstanding the above and in order to avoid unintended abandonment of this application, Applicants enclose a Notice of Appeal.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date 5/31/07

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